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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,147	07/27/2001	Thomas J. Pinnavaia	MSU 4.1-553	1331

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MCLEOD MOYNE & REILLY, P.C.
2190 COMMONS PARKWAY
OKEMOS, MI 48864

EXAMINER

KUHAR, ANTHONY J

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 05/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,147

Applicant(s)

PINNAVAIA ET AL.

Examiner

Anthony J Kuhar

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1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/4/03 in paper no. 5.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 9-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "organic modifier component". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2-5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valange et al.

Valange et al. discloses mesostructured alumina with pore volumes of greater than or equal to $0.40 \text{ cm}^3/\text{g}$ and with surface areas greater than $200 \text{ m}^2/\text{g}$ (see page 605, left column and table 3). A non-ionic surfactant was used, namely NNDDNO. It appears it would have a lattice spacing of at least 2.0 nm. Valange does not disclose multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see *In re Best*, 195 USPQ 430.

Claims 1, 2-5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Pena et al, "Thermally Stable Mesoporous Alumina Synthesized with Non-ionic Surfactants in the Presence of Amines".

Gonzalez-Pena et al. discloses mesostructured alumina with pore volumes of greater than or equal to $0.40 \text{ cm}^3/\text{g}$ and with surface areas greater than $200 \text{ m}^2/\text{g}$ (see table 1). Non-ionic surfactants were used, such as PEO and DPA. It appears it would have a lattice spacing of at least 2.0 nm from the x-ray diffractogram in Figure 1. Gonzalez-Pena et al. does not disclose multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see *In re Best*, 195 USPQ 430.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Pena et al., "Improved Thermal Stability of Mesoporous Alumina Support of Catalysts for the Isomerization of Light Paraffins".

Gonzalez-Pena et al. discloses mesostructured alumina with pore volumes of greater than or equal to $0.40 \text{ cm}^3/\text{g}$ and with surface areas greater than $200 \text{ m}^2/\text{g}$ (see Figure 1B and Table 1 under Results and Discussion). Non-ionic surfactants were used, such as PEO (see first page of experimental). It appears it would have a lattice spacing of at least 2.0 nm from the x-ray diffractogram in Figure 2. Pseudo-boehmite and boehmite phases are taught at the bottom of the first two pages of the results and discussion section. Gonzalez-Pena et al. does not disclose

multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see *In re Best*, 195 USPQ 430.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinnavaia '706.

Pinnavaia '706 discloses mesostructured alumina with pore volumes of greater than or equal to $0.40 \text{ cm}^3/\text{g}$ and with surface areas greater than $200 \text{ m}^2/\text{g}$ (see column 23, lines 39-40). Non-ionic surfactants were used, such as PEO (see column 14, line 47 to column 15, line 16). A low angle x-ray diffraction line corresponding to a basal spacing of at least 3.0 nm is taught in column 6, line, 57. The pseudo-boehmite phase is taught at the bottom of column 17. Pinnavaia '706 does not disclose multiple wide angle x-ray diffraction lines, but may inherently show these lines in an x-ray diffractogram. Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see *In re Best*, 195 USPQ 430.

Applicant's arguments filed 3/4/03 have been fully considered but they are not persuasive.

Regarding the Valange reference, samples 2, 3, 6, and 8 all show low angle x-ray peaks. Applicant only provided x-ray diffractograms for samples 10 and 11. Therefore, applicant did not meet the burden of showing its product is patentably distinct by either providing x-ray diffractograms for the above mentioned samples or by providing a statement stating that the x-ray diffractograms of samples 10 and 11 are also representative of samples 2, 3, 6, and 8. Also, the pH was adjusted to 7.5 rather than 7 for sample 11 in the Valange reference.

Regarding Gonzalez-Pena et al, "Thermally Stable Mesoporous Alumina Synthesized with Non-ionic Surfactants in the Presence of Amines", applicant did not perform a step of removing the surfactant by Soxhlet extraction with ethanol for 15 hr. Also, applicants did not provide an x-ray diffractogram for the sample X0.1 which shows a low angle peak. Furthermore, applicant's statement that the x-ray diffractogram for sample S0.1 does not have a strong peak near 11.5 degrees is moot because a peak near 11.5 degrees is not required by the claims.

Regarding Gonzalez-Pena et al., "Improved Thermal Stability of Mesoporous Alumina Support of Catalysts for the Isomerization of Light Paraffins", applicant did not perform a step of removing the surfactant by Soxhlet extraction with ethanol for 15 hr. Also, applicant aged the sample for 24 hrs at 55 C while the reference aged it for 24 hrs at room temperature. Also, applicants did not provide an x-ray diffractogram for the sample XC6 which shows a low angle peak.

Regarding Pinnavaia '706, applicant appears to use much smaller amounts of starting materials in the examples than the reference. A brief summary of how the required materials were scaled down proportionally is required. Also, Pinnavaia '706 shows a low angle x-ray peak for example 6. Applicant did not provide an x-ray diffractogram for example 6. The declaration

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states below Figure 7 that the diffraction peaks are characteristic of crystalline hydrated alumina phase. This is contrary to the statement the sharp peaks are characteristic of ammonium chloride. Also, the explanation regarding Figure 8 of the declaration is confusing. It is not clear how the products of the prior art are different from that of applicant's claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J Kuhar whose telephone number is 703-305-7095. The examiner can normally be reached on 8:45 am - 5:15 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stan Silverman can be reached on 703-308-3837. The fax phone numbers for the

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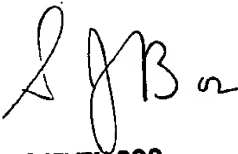
organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

AK

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April 29, 2003


**STEVEN BOS
PRIMARY EXAMINER
GROUP 1100**